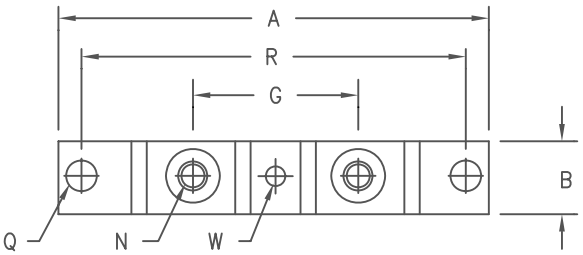
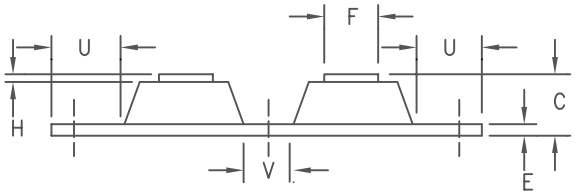
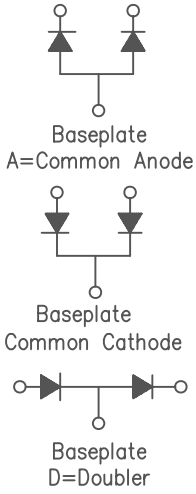
Schottky PowerMod

CPT40130 – CPT40145







Notes:
Baseplate: Nickel plated copper

Dim.	Inches		Millimeters		
	Min.	Max.	Min.	Max.	Notes
A	---	3.630	---	92.20	
B	0.700	0.800	17.78	20.32	
C	---	0.630	---	16.00	
E	0.120	0.130	3.05	3.30	
F	0.490	0.510	12.45	12.95	
G	1.375 BSC		34.92 BSC		
H	0.010	---	0.25	---	
N	---	---	---	---	1/4–20
Q	0.275	0.290	6.99	7.37	Dia.
R	3.150 BSC		80.01 BSC		
U	0.600	---	15.24	---	
V	0.312	0.340	7.92	8.64	
W	0.180	0.195	4.57	4.95	Dia.

Microsemi Catalog Number	Industry Part Number	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
CPT40130*	MBR40030CT	30V	30V
CPT40135*	400CNQ035	35V	35V
CPT40140*	400CNQ040	40V	40V
CPT40145*	400CNQ045 MBRP40045CTL	45V	45V

*Add Suffix A for Common Anode, D for Doubler

- Schottky Barrier Rectifier
- Guard Ring Protection
- 400 Amperes/30 to 45 Volts
- 150°C Junction Temperature
- Reverse Energy Tested

Electrical Characteristics

Average forward current per pkg	$I_{F(AV)}$	400 Amps	T_C = 79°C, Square wave, $R_{\theta JC}$ = 0.16°C/W
Average forward current per leg	$I_{F(AV)}$	200 Amps	T_C = 79°C, Square wave, $R_{\theta JC}$ = 0.32°C/W
Maximum surge current per leg	I_{FSM}	3000 Amps	8.3ms, half sine, T_J = 150°C
Maximum repetitive reverse current per leg	$I_{R(OV)}$	2 Amps	f = 1 KHZ, 25°C, 1 usec square wave
Max peak forward voltage per leg	V_{FM}	0.57 Volts	I_{FM} = 200A; T_J = 25°C*
Max peak forward voltage per leg	V_{FM}	0.49 Volts	I_{FM} = 200A; T_J = 150°C*
Max peak reverse current per leg	I_{RM}	3.5 A	V_{RRM}, T_J = 125°C*
Max peak reverse current per leg	I_{RM}	10 mA	V_{RRM}, T_J = 25°C*
Typical junction capacitance per leg	C_J	7000 pF	V_R = 5.0V, T_C = 25°C

*Pulse test: Pulse width 300 usec, Duty cycle 2%

Thermal and Mechanical Characteristics

Storage temp range	T_{STG}	−55°C to 150°C
Operating junction temp range	T_J	−55°C to 150°C
Max thermal resistance per leg	$R_{\theta JC}$	0.32°C/W Junction to case
Max thermal resistance per pkg	$R_{\theta JC}$	0.16°C/W Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.08°C/W Case to sink
Terminal Torque		35–50 inch pounds maximum
Mounting Base Torque (outside holes)		30–40 inch pounds maximum
Mounting Base Torque (center hole)		8–10 inch pounds maximum
center hole must be torqued first		
Weight		2.8 ounces (77 grams) typical

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05–10–07 Rev. 5

CPT40130 – CPT40145

Figure 1
Typical Forward Characteristics – Per Leg

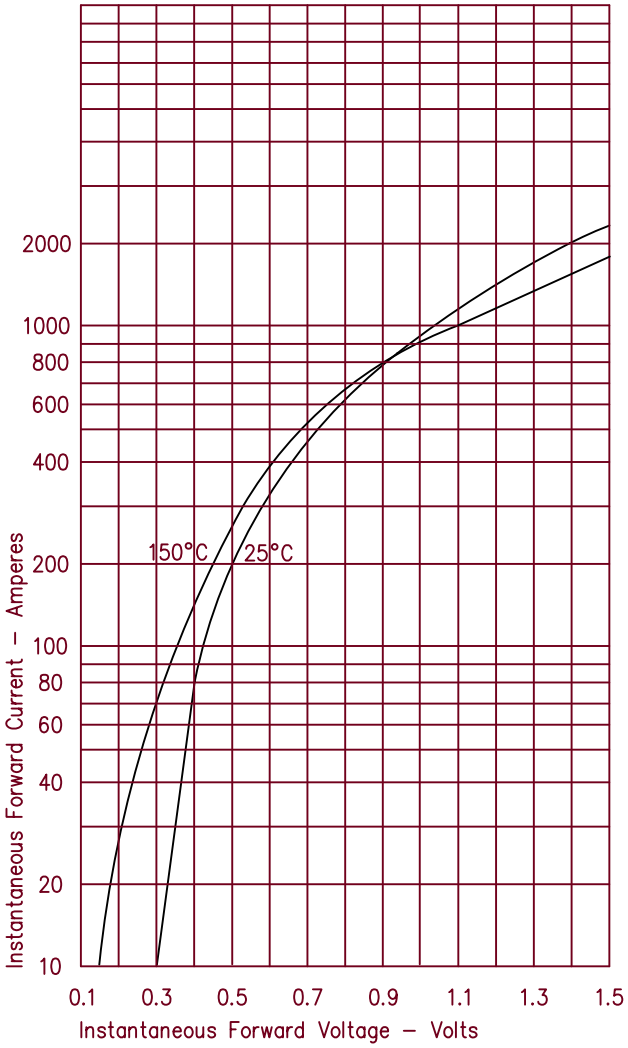

Figure 2
Typical Reverse Characteristics – Per Leg

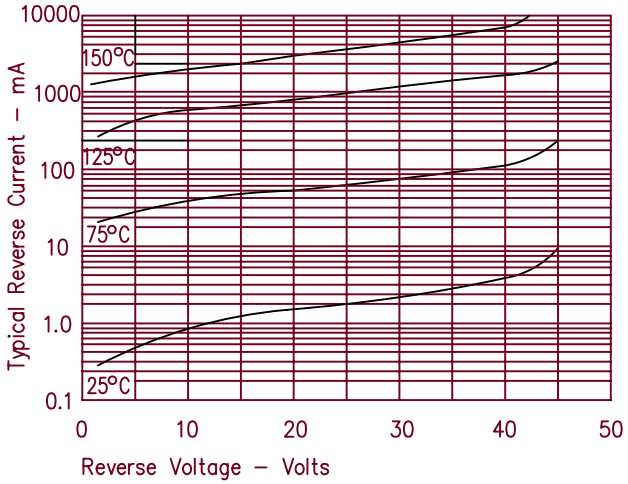

Figure 3
Typical Junction Capacitance – Per Leg

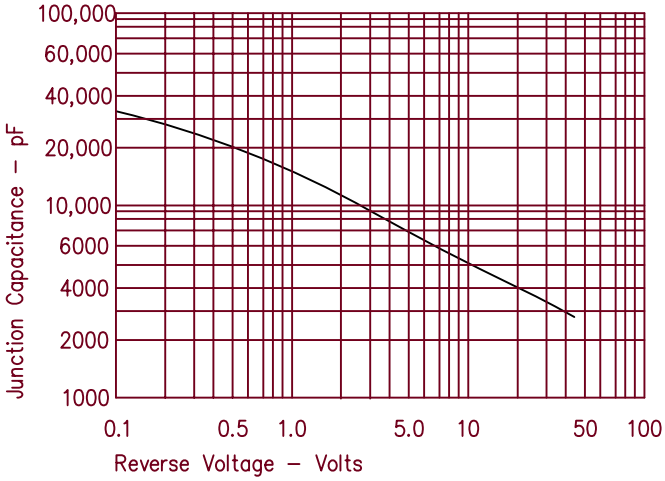

Figure 4
Forward Current Derating – Per Leg

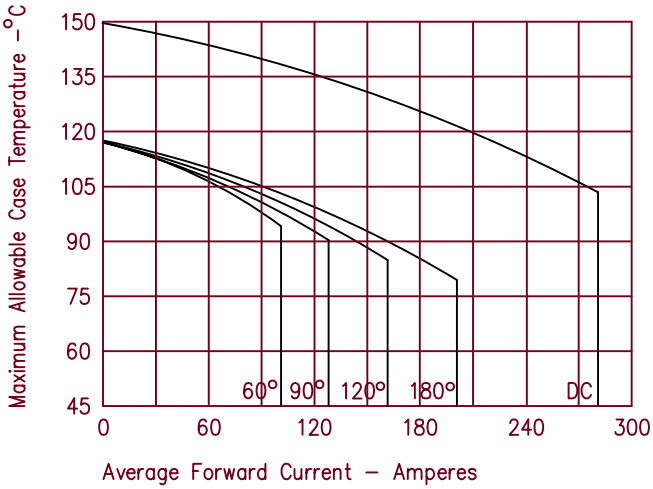

Figure 5
Maximum Forward Power Dissipation – Per Leg